

# What You Should Know

# Harmful

## Algal Blooms and other Organisms of Concern in Coastal Waters

### What are Harmful Algal Blooms?

Algae (Al-Gee) are microscopic organisms that can be found in coastal waters. They are major producers of oxygen and food for many of the animals that live in these waters. When the environmental conditions are favorable for their development, these cells may multiply rapidly and form high numbers of cells, and this is called an algal bloom. A bloom often results in a color change in the water. Algal blooms can be any color but the most common ones are red or brown. These blooms are referred to as red tides or brown tides. Most algal blooms are not harmful but some do affect fish and humans, as well as other animals like birds and marine mammals. These are known as Harmful Algal Blooms (HABs).

### What are the causes of these blooms?

Blooms can occur due to a number of reasons. An increase in the amount of nutrients in the water can cause algal blooms to occur. Unusual weather events such as heavy rainfalls and droughts can lead to blooms. Global climate change ("global warming") has been linked to an increase in algal blooms. Algal blooms may also occur due to the transfer of foreign algae to waters they do not ordinarily inhabit, as in the ballast water of ships.

### How are HABs dangerous to fish and humans?

HABs are dangerous to fish by depleting the oxygen that is dissolved in the water. Some HABs can also produce toxins that result in fish kills. A few HABs produce toxins that can cause illness in humans and other animals.

### How do people get exposed to HABs?

Most HAB exposures come from consuming toxins that are present in shellfish or finfish. There are also toxins that become airborne during a bloom and people get sick from inhaling them.

### Are HABs in Virginia?

HABs are reported rarely in Virginia, but it is important to be aware of them if they happen.

### Is it safe to eat seafood?

In general, it is safe to eat seafood. However, if you see fish that have lesions or look diseased, or if you know that the fish you want to eat was caught in an area during an algal bloom, do not eat it.

### What are the symptoms of exposure to HABs?

Symptoms vary depending upon the toxin involved and the part of the body affected. Most symptoms involve the nervous and digestive systems. Skin irritation is possible if the skin has been exposed to HABs. Additionally, respiratory irritation may occur if certain toxins have been inhaled.

### Can people who become sick from exposure to HABs transmit disease to anyone?

The illnesses caused by toxins from HABs are not spread from one person to another.

### What is Virginia doing about HABs?

The Virginia Department of Environmental Quality and the Virginia Department of Health, including the Virginia Division of Shellfish Sanitation, work together to regularly monitor the water and shellfish growing areas for the presence of HABs and to conduct surveillance for human health effects. The public will be notified if a HAB that could affect human health is identified.

### How does someone report a HAB and/or a fish kill?

- If you see a red or brown tide, water that has an abnormal color, or a fish kill, call: **The Department of Environmental Quality:** (804) 684-7000.

- If you see fish with lesions, call: **The Virginia Institute of Marine Sciences:** (757) 518-2000.

- If you are concerned that you have been exposed to a HAB, please see your doctor or call your local health department. Telling your doctor about contact with water may help him/her treat the illness properly.

For more information visit our website at: [www.vdh.virginia.gov](http://www.vdh.virginia.gov). If you have health concerns, please call the Virginia Department of Health HABs Hotline at (888) 238-6154.



## SKIN INFECTIONS CAUSED BY OTHER WATER ORGANISMS:

## Mycobacteria

### What You Should Know

Mycobacteria are a group of bacteria that may cause illness in people. Tuberculosis is the most well-known illness caused by one of the bacteria in the mycobacteria group. Other types of mycobacteria, called nontuberculous mycobacteria, may cause illnesses in people that are different from tuberculosis. Nontuberculous mycobacteria are found in many places including coastal waters, swimming pools and tropical fish aquariums.

### What illnesses do nontuberculous mycobacteria cause?

Certain kinds of nontuberculous mycobacteria may cause skin infections. These infections may look like open sores, red lumps, or red rashes. The skin infections are usually on the fingers, hands, elbows, knees, and feet. If untreated, nontuberculous mycobacteria may spread to people's joints or bones. People with weak immune systems have a greater risk of infection spreading to other parts of their bodies.

### How do you get infected with nontuberculous mycobacteria?

People become infected when water containing the bacteria comes into contact with cuts or open sores on the skin. The bacteria may be in swimming pools, aquariums, or coastal waters. People may also get infected by handling infected fish. These fish may also have open sores on their skin. As a result, the illness is nicknamed such things as "fish handler's disease" and "aquarium handler's disease." Nontuberculous mycobacteria that cause skin infections do not spread from one person to another.

### How are nontuberculous mycobacteria infections treated?

Minor infections may simply heal on their own or with heat placed on the area of infection. Other infections should be treated with antibiotics. More serious infections may require surgery to cure. Telling your doctor about contact with water or fish may help him/her treat the infection properly.

### How long does it take for a nontuberculous mycobacteria skin infection to heal?

Usually the sooner an infection is treated, the sooner the infection will clear up. Delay in treating may cause the skin infection to last for weeks to months and require a long course of antibiotics.

### How can nontuberculous mycobacteria be prevented?

The best way to prevent infections is by wearing gloves when fishing and washing thoroughly with soap and water after coming into contact with fish, aquariums, swimming pools, or coastal waters. People with weak immune systems should be especially careful to take precautions when coming into contact with water that may contain nontuberculous mycobacteria.



## Vibrio

### What You Should Know

Vibrios are a group of bacteria that may cause illness in people. Most vibrio bacteria are found in salt water but they may be found in fresh water, too. Cholera is probably the most well-known illness caused by one of the vibrio bacteria. People sick with cholera usually have intestinal symptoms such as diarrhea and vomiting. People can get cholera from drinking water contaminated with vibrio bacteria or from eating raw or undercooked seafood, especially shellfish. Other types of vibrio bacteria found in salt water may cause skin infections.

### What does skin infected with vibrio bacteria look like?

Open round sores (ulcers) may appear on skin infected with vibrio bacteria. The skin may also become red and puffy (cellulitis).

### Can a person with a vibrio bacteria skin infection have other signs of illness?

Yes. A person may have a fever. If untreated, the infection may spread to a person's bloodstream. People with weak immune systems have a greater risk of infection spreading beyond skin.

### How do you get skin infections from vibrio bacteria?

People become infected when water containing vibrio bacteria comes into contact with cuts or open sores on skin. Vibrio bacteria may be found in coastal waters, including the Chesapeake Bay, where people swim and fish. Vibrio bacteria that cause skin infections do not spread from one person to another.

### How are vibrio bacteria skin infections treated?

Vibrio bacteria skin infections are treated with antibiotics. Telling your doctor about swimming or fishing in coastal water may help him/her treat the infection properly.

### How can vibrio bacteria skin infections be prevented?

The best way to prevent vibrio skin infections is to stay out of coastal waters if your skin has open cuts or sores. Washing skin thoroughly with soap and water will also help prevent infection. People with weak immune systems should be especially careful to take precautions when coming into contact with water that may contain vibrio bacteria.

### What is Virginia doing about nontuberculous mycobacteria and vibrio bacteria skin infections?

The Virginia Department of Health (VDH) keeps track of the number of laboratory tests for nontuberculous mycobacteria and vibrio bacteria, and investigates any unusual number of positive tests. VDH also educates health care workers, people exposed to coastal waters, and people who work in jobs that put them at risk for nontuberculous mycobacteria and vibrio bacteria infection about the illnesses they may cause and how they can be prevented.